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BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

DOD's Industrial Preparedness Program Needs National Policy To Effectively Meet Emergency Needs

The Department of Defense's Industrial Preparedness Planning Program is to make sure U.S. industry can respond to wartime needs for military items. However, despite repeated study, this program has remained in a state of disarray for the past several years. The current program has limited funds and a low priority, and it is ineffective.

Failure to adequately plan with industry may hinder U.S. ability to meet defense needs.

GAO recommends that the Congress, in coordination with the executive branch, establish a national policy to define industrial base expectations. The Secretary of Defense should restructure the program to complement it.

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To the President of the Senate and the
Speaker of the House of Representatives

This report discusses the Department of Defense's Industrial Preparedness Planning Program and the program's ineffectiveness despite repeated study. The report also states that poor industrial preparedness planning could impair U.S. defense posture and could severely limit U.S. defensive options.

We initiated this review because of growing concern regarding the industrial base's ability to sustain U.S. Forces in conventional combat and because we wanted to focus attention on the fact that no significant improvement has occurred in the program since our last review in 1977. This review is an important aspect of our continuing efforts to recommend improvements in the Department's mobilization planning with industry.

We are sending copies of this report to the Chairmen, Senate Committees on Governmental Affairs, on Armed Services, and on Appropriations and House Committees on Government Operations, on Appropriations, and on Armed Services; the Director, Office of Management and Budget; and the Secretaries of Defense, the Army, the Navy, and the Air Force.

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Acting Comptroller General
of the United States

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

DOD'S INDUSTRIAL PREPAREDNESS
PROGRAM NEEDS NATIONAL POLICY
TO EFFECTIVELY MEET EMERGENCY
NEEDS

D I G E S T

The Department of Defense (DOD) is responsible for assuring that sufficient industrial capacity exists to meet potential wartime needs for defense systems, equipment, and component parts. DOD's Industrial Preparedness Planning Program was developed to satisfy this responsibility. Many organizations, including GAO, have found it to be ineffective. DOD has reevaluated the program, but no significant improvement has resulted to date.

Industrial preparedness is closely tied to important planning assumptions, including warning time, conflict duration, and other essential factors, such as availability of strategic and critical materials, energy, transportation, and skilled people. (See pp. 7 to 13.)

DOD guidance has emphasized programs designed to enhance initial combat capability. Because there is doubt about the Industrial Preparedness Planning Program's ability to significantly contribute to initial combat capability, a low priority has been given to the program. (See pp. 13 and 14.)

Initial combat capability is important, but failure to plan adequately with industry may mean that the United States can only fight a short war because no other program exists to bridge the gap between initial combat capability and war materiel needs should U.S. involvement become prolonged. In fact, huge gaps exist between when military stocks will be exhausted and when production will equal needs. (See pp. 13 to 18.)

Two essential elements of DOD's program--item selection and requirements determination--are done differently by each service and are often not done well. Industry's participation in the DOD planning program has been voluntary and unfunded for many years. (See pp. 19 to 26.)

Planning information received from industry sources is incomplete and unreliable because prime contractors generally base their production schedules on inadequate analyses and unrealistic assumptions regarding adequacy of subcontractor support and availability and adequacy of Government-furnished equipment, raw materials, and skilled labor. (See p. 26.)

Many industry sources do not identify production enhancement measures as part of their planning because they are not reimbursed for the costs of developing this information. Others have identified enhancement measures, but the services generally have not had the funds to implement the measures. Further, in some cases, planners have discouraged contractors from identifying enhancement measures because of personnel constraints and lack of funds. (See p. 28.)

Since industrial preparedness information about production response capabilities could be used to offset the need to procure and stock items, the DOD communities' lack of management attention to the program may be resulting in lost opportunities to reduce war reserve stockage requirements. Trade-offs between industrial production capability and reserve stockage requirements are not being made even though available information indicates these trade-offs might provide economic benefits. (See pp. 29 to 30.)

Many program improvement initiatives now being proposed by DOD had also been proposed during GAO's last review. But many have not been implemented or have been implemented on a small scale due to lack of funds.

DOD has continually given the Industrial Preparedness Planning Program a low priority and has provided limited funds. However, in view of the current threat, limited options, and risks associated with an unresponsive base, a national policy is needed to define industrial base expectations.

RECOMMENDATIONS

GAO recommends that the Congress, in coordination with the executive branch, establish a clearly defined and comprehensive national policy regarding industrial preparedness.

Hearings should be held to develop this policy.
This policy should address

- what is expected of the industrial base and
- what can be invested to achieve these expectations.

Once this national policy is established, the Secretary of Defense should restructure the program to complement the policy.

In the meantime, the Secretary of Defense should clearly define the

- circumstances that the industrial base is expected to be responsive to and the role it will play in each and
- priority and funding availability for industrial preparedness planning in relation to other DOD and service branch programs.

The Secretary should also ensure that:

- Service planning efforts interface with other DOD programs to assure continuity of support over the planned period.
- Service branch planning efforts are scaled to what can be accomplished realistically within assigned priority and available funds, considering either
 - substantially limiting the number of individual items planned or
 - limiting indepth planning to a few vital items while using studies of key industrial sectors to identify potential mobilization problems.

AGENCY COMMENTS

On February 24, 1981, DOD provided oral comments on this report. DOD generally agreed with GAO's findings, conclusions, and recommendations. DOD agreed that the Industrial Preparedness Planning Program has been given a low priority and, as a result, is ineffective. DOD said that:

- It is working to improve the program and related resource allocations.

--The program has recently been included in the Defense System Acquisition Review Council process.

--The system, equipment, and item program managers have been given responsibility for carrying out the program.

GAO did not verify the extent to which the services had implemented these recent changes or evaluate the potential effect of these changes on program operations.

DOD agreed that a national policy about industrial preparedness is needed and said that the lack of such a national policy must be addressed by the Congress and the National Security Council. DOD also said that the program needs to be supported at high levels within DOD if it is to become fully supportable and viable.

Finally, DOD said that maintaining the capacity of the industrial base to respond to military contingencies is a major element of U.S. strength and deterrence.

On April 3, 1981, DOD provided written comments which generally confirmed the earlier oral positions. These written comments are included as appendix I.

C o n t e n t s

		<u>Page</u>
DIGEST		i
CHAPTER		
1	INTRODUCTION	1
	Prior GAO report	2
	Objectives, scope, and methodology	2
2	INDUSTRIAL PREPAREDNESS AND NATIONAL DEFENSE	5
	The industrial preparedness planning program	5
	Why industrial preparedness planning is important	6
	Key assumptions affecting industrial preparedness	7
	Other factors affecting industrial preparedness	8
	Where we stand today	13
3	DOD'S INDUSTRIAL PREPAREDNESS PLANNING PROGRAM IS IN DISARRAY	19
	Today's planning program	19
	Item selection procedures	20
	Requirements determination	23
	Industry planning data	26
	Low program priority	27
	Defense studies and initiatives	30
	Conclusions	32
4	INDUSTRIAL PREPAREDNESS PLANNING--WHAT IS NEEDED?	34
	What does the United States expect from the industrial base?	34
	Conclusions	36
	Recommendations	36
	Agency comments	37
APPENDIX		
I	Letter dated April 3, 1981, from the Acting Under Secretary of Defense, Research and Engineering	38
II	Listing of subordinate commands and installations visited or included in this review	41
III	Listing of selected past reports related to industrial preparedness	43

APPENDIX

Page

IV	Listing of selected recent testimony regarding industrial preparedness given before the Defense Industrial Base Panel of the House Committee on Armed Services, 96th Congress, second session	47
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ABBREVIATIONS

DOD	Department of Defense
GAO	General Accounting Office

CHAPTER 1

INTRODUCTION

The Department of Defense (DOD) is responsible for assuring that sufficient industrial capacity exists to meet potential war-time needs for defense systems, equipment, and component parts. Industrial preparedness planning evolves from the Defense Production Act of 1950 and subsequent amendments. The President has delegated responsibility for emergency preparedness functions to various executive branch departments and agencies.

Under section 401 of Executive Order 11490, issued in October 1969, the Secretary of Defense is assigned the responsibility for (1) developing and administering preparedness planning with industry to ensure timely purchase and production of selected military equipment and supplies needed to fulfill emergency requirements and (2) taking the necessary steps to eliminate problems in maintaining the required mobilization production base.

The Secretary of Defense also issues guidelines to the military departments to aid in their development of operational war plans. On the basis of these plans, each service computes detailed time-phased requirements regarding the equipment needed to perform assigned missions. These time-phased requirements are the basis for industrial preparedness planning. Various DOD directives, instructions, and manuals provide basic guidance to the services for conducting this planning with industry.

Numerous organizations have studied DOD's Industrial Preparedness Planning Program. Some of these organizations include DOD, the services, the Industrial Advisory Council, the Joint Logistics Review Board, the American Defense Preparedness Association, and the Defense Science Board. (See app. III for a list of these studies.) The following are some of the major problems noted most frequently in these studies.

- Industry's data is based on unrealistic assumptions regarding availability of equipment, raw materials, long leadtime components, and subcontractor support.
- Little is known about second- and third-tier subcontractor support capabilities because planning does not extend down that far.
- The base cannot respond within the time frames required because industrial preparedness measures have not been identified and/or funded.
- The program is not resulting in reliable information for use in mobilization because virtually every significant problem area has been assumed resolved.

PRIOR GAO REPORT

In our last review of the program in 1977, 1/ we reported that mobilization production planning then being conducted with private industry by DOD did little to strengthen U.S. industrial capacity to meet emergency requirements. Data gathered was not being analyzed or acted on, and the program had lost credibility. We recommended that the Secretary of Defense consider the following in restructuring the program.

--What priority does maintaining an industrial mobilization base have on the overall defense strategy?

--What level of resources can be committed to this effort?

--What can be accomplished within this level of resources?

To restructure the program, we recommended that the Secretary consider

--limiting individual item planning to what can be accomplished with available resources and

--examining the key sectors of the defense industry and its related capacity--again limiting the scope to what can be done within available funds.

DOD generally agreed with our findings. It said that increased management attention would be devoted to improving program effectiveness.

OBJECTIVES, SCOPE, AND METHODOLOGY

The objectives of our review were to assess (1) the effectiveness of DOD's efforts to improve the Industrial Preparedness Planning Program since our last review in 1977, (2) the major problems still facing the program, and (3) the actions planned to improve the program in the future.

During our review, we

--reviewed various DOD and service branch directives, instructions, memorandums, manuals, and budget information regarding program operations;

--reviewed the actual planning conducted by each service branch for a limited number of items randomly selected from those identified for planning in fiscal year 1980; and

1/"Restructuring Needed of Department of Defense Program for Planning with Private Industry for Mobilization Production Requirements" (PSAD-77-108, May 13, 1977).

--interviewed program officials and planning personnel within (1) the Office of the Secretary of Defense, (2) headquarters and intermediate headquarters of the Army, Navy, and Air Force, and (3) many subordinate commands and installations, as shown in appendix II.

Further, we made an extensive literature search to identify studies made on past and present program operations. The information provided by this search was used to broaden our perspective regarding the problems and issues identified in this review. (See app. III for a partial listing.)

We obtained recent official testimony concerning the program and its related aspects which provided additional insight and updated information regarding program issues. (See app. IV for a partial listing.)

During our audit, the Army Audit Agency and the Naval Audit Service were concurrently reviewing their respective industrial preparedness planning programs. We closely coordinated our audit work with these organizations to prevent possible duplication of effort.

Because of resource constraints, we limited the scope of our review. First, DOD's Industrial Preparedness Planning Program includes planning for both the production of items and the maintenance and repair of inoperable parts/equipment. To limit the review to a manageable level, we confined our audit to the planning for the production of items. Maintenance and repair issues were covered partially in past reports, several of which are listed in appendix III. The Army Audit Agency was also reviewing this area extensively and is in the process of issuing several reports.

The Defense Logistics Agency's industrial preparedness planning operations were also excluded from this review. Several of our past reports which discuss problems regarding various aspects of the Defense Logistics Agency's program are listed in appendix III.

To obtain a representative view of service branch planning efforts in fiscal year 1980, we randomly selected a limited number of items from those items identified for industrial preparedness planning by the Army, Navy, and Air Force. We did not include Marine Corps planning because the majority of its items are planned by other services.

To make the best use of our resources, we decided to limit the Army sample to items managed by the Army Armament Materiel Readiness Command. This command made the Army uniquely suited for this limitation since it accounted for about 74 percent of all Army items reported for planning in fiscal year 1980. This command is also DOD's single service manager for conventional ammunition items, manages many weapons and fire control items

used servicewide, and was excluded from our last review in 1976. Because the command accounts for the majority of the Army's program, we believe the work performed at this command, combined with program information obtained at Army headquarters and intermediate headquarters, provides a sound basis of assessment for the Army's program overall.

We randomly selected items from those identified for planning by all five of the Navy's systems commands, as well as two major inventory control points. For the Air Force sample, we randomly selected items from those identified for planning by each of the five air logistics centers.

Because of sample limitations, we could not project the incidence of each specific planning deficiency found in our sample to the total universe of planned items. However, we believe that the sample data, combined with additional program information obtained through interviews and reviews of written program correspondence, provides an accurate assessment of the current DOD Industrial Preparedness Planning Program. The accuracy of this assessment has also been attested to in agency comments (see app. I).

During our audit, we reviewed mobilization production planning information provided to the services by contractors for each of our sample items. However, we did not directly solicit industry's opinions about the value of the program because our work showed that no significant improvement had occurred since our last review in 1976. Industry's views obtained at that time indicated that DOD's Industrial Preparedness Planning Program had lost its credibility.

CHAPTER 2

INDUSTRIAL PREPAREDNESS AND NATIONAL DEFENSE

The DOD Industrial Preparedness Planning Program is only one aspect of total mobilization planning. However, the program is essential to assure that industry will be responsive to defense needs in a national emergency.

Industrial preparedness is closely tied to important assumptions, including warning time, duration of conflict, and other essential factors, such as the availability of strategic and critical 1/ materials, energy sources, transportation, and skilled people.

Because of budgetary constraints, current DOD guidance and investment decisions emphasize programs which, in their opinion, do more to enhance initial combat capability than does industrial preparedness planning. However, failure to assure industrial preparedness may impair the U.S. ability to fight a long war and may limit military options to capitulation or nuclear weapons in such a situation. The ability of industry to reconstitute U.S. Forces and the economy after a war may also be impaired.

THE INDUSTRIAL PREPAREDNESS PLANNING PROGRAM

Since it would be impractical for the industrial base to produce military items at wartime levels during peacetime, a peacetime program of planning with industry to meet potential wartime needs for military items is essential. Such a program is the DOD Industrial Preparedness Planning Program. Generally, the objective of this program is to ensure that key industries remain able during peacetime to respond quickly with the volume of war materiel necessary to sustain U.S. Forces in conventional combat.

A number of different approaches can be taken to ensure that a responsive industrial base exists during peacetime. Ideally, the industrial base for each essential military item could be kept in production at some minimum rate. In an emergency, the number of work shifts could be increased with a subsequent increase in item production to meet mobilization demand. This is known as the "warm base" situation.

However, in reality there is limited peacetime demand for many items that would be required in mobilization, and the industrial base for these items, such as ammunition, is inactive. This is known as the "cold base" situation.

1/"Strategic" refers to the relative availability of materials, while "critical" refers to their essentiality.

Planning measures to assure responsiveness from a warm or cold base situation differ. Generally, cold base situations require more investment in preparedness actions than warm base situations do. Because of limited peacetime defense budgets, these investment costs must be traded off against the relative gain in responsiveness for each industrial preparedness action. The following are some trade-offs that should be considered to enhance responsiveness.

- Modernization of Government-owned production facilities versus increased reliance on commercial production capability.
- Stockpiling of long leadtime components to enhance production capabilities versus the danger of item obsolescence, storage costs, and deterioration.
- Provision/enhancement of plant production equipment packages versus the danger of obsolescence, deterioration, and incompatibility with state-of-the-art production methods.
- The funding of preparedness measures identified by defense contractors or the stockpiling of war reserve materiel to allow for added response time and/or production deficiencies.
- Institution of training programs to assure the availability of skilled personnel; etc.

WHY INDUSTRIAL PREPAREDNESS PLANNING IS IMPORTANT

The industrial preparedness program is one way to identify deficiencies in production capabilities for essential military items and to devise a plan of action before mobilization begins. The ability of the defense industrial base to provide for wartime needs is an essential element of the U.S. conventional defense posture. Peacetime planning with industry must ensure that industrial capacity is not only adequate, but that it can be brought to bear in time to provide continuing support when war reserve stocks are depleted. The long production leadtimes for the technologically sophisticated weaponry used in conventional warfare today have increased the need for effective industrial preparedness planning. As stated by the Secretary of Defense in the fiscal year 1976-77 annual DOD report:

"A viable industrial base is a major element of our national strength and deterrent posture, and maintaining the capacity of that industrial base to respond to potential wartime demands continues to be a major consideration in our defense planning."

Ironically, the nuclear parity between the United States and the Soviet Union is seen by some theoretical circles as increasing

the need for industrial preparedness planning to ensure a credible conventional deterrent. The continuing enhancement of conventional capabilities by Warsaw Pact forces is seen by some defense planners as increasing the possibility of a conventional conflict. Such a conflict would involve, for the first time, direct armed combat between two nuclear powers, the United States and the Soviet Union. The ability to contain such a conflict at the conventional level is seen as essential, both as a deterrent to starting such an action and to reducing the possibility of escalation to nuclear weaponry. Without the ability to effectively deter conventional aggression with conventional means, the United States would be limited to essentially two options--surrender or escalation to nuclear weapons. Conventional capability is seen then as providing an essential option to the all-or-none response thought to characterize a nuclear exchange, thereby limiting the possibility of its occurrence.

To assure this conventional capability, industry must be able to provide the war materiel needed to sustain U.S. Forces in combat once war reserve stocks are depleted. The industrial base must also be able to replenish war reserve stocks quickly and to stabilize the economy after the war. Without sufficient planning, the United States could be vulnerable to renewed conventional attack with response options again limited to nuclear capability or capitulation.

These factors all point to the need for industrial preparedness planning.

KEY ASSUMPTIONS AFFECTING INDUSTRIAL PREPAREDNESS

Warning time

The amount of advance warning that the United States will have before it is involved in active combat is an important factor in determining industry's contribution in the initial stages of a war. Short warning times mean a come-as-you-are war. Initial combat will have to be sustained from onhand stocks since the industrial base will not have time to prepare for wartime production. A longer period of advance warning would allow industry more time to shift to a wartime production footing and, therefore, industry's contribution to the war effort would be greater.

Today, it is generally accepted that a long warning period, such as that which preceded U.S. involvement in World War II, cannot be expected. More importantly, if such a warning time were available, would the United States recognize and act on it?

Long war or short war?

Will the duration of the next war that the United States is involved in be long or short? Although defense strategists currently see a conventional conflict between allied and Warsaw Pact forces as the most demanding scenario the United States would

face, these strategists are uncertain about the duration of the conflict.

Some strategists foresee a short war of high intensity because of the high density of sophisticated weaponry present on both sides. These strategists point to the high attrition rates and the short duration of the 1973 Arab-Israeli war as support for their theory. Assuming no significant warning time prior to hostilities, long production leadtimes for some essential components would preclude the industrial base from contributing significantly during a short war. For instance, some titanium forgings used in aircraft production take more than 2 years to produce. Production leadtimes for the integrated circuitry used in some Air Force avionics systems are now in excess of 1 year. In such situations, industry's role in the short war would be limited to one of post-war reconstitution.

Other strategists believe that a long war in Europe is plausible and point to the World War II, Korea, and Vietnam experiences as support for their position. In such a situation, the industrial base would have a much greater opportunity to supply the war materiel needed.

OTHER FACTORS AFFECTING INDUSTRIAL PREPAREDNESS

Although DOD's Industrial Preparedness Planning Program is important, it is only one of several critical factors on which industrial preparedness depends. Many questions exist regarding the adequacy of these other critical factors to meet the demands of a national emergency. Although not an all inclusive list, some of the more important factors are discussed below.

Availability of raw materials

The availability of strategic and critical raw materials is vital to the manufacture of many defense and essential civilian items. However, the United States is either totally or partially dependent on foreign supply sources for many of its strategic and critical materials. Because of the extreme importance of these materials to manufacture and because of the need to avoid a dangerous dependence on foreign supply sources during a national emergency, the Congress enacted the Strategic and Critical Materials Stock Piling Act of 1939. Under this act, and its subsequent amendments, 93 strategic and critical materials are stockpiled at 117 locations throughout the country. Administration of the National Stockpile is one of the responsibilities of the new Federal Emergency Management Agency.

The goal of the stockpile program is to have enough essential materials to sustain the United States for the first 3 years of a conventional war. However, since World War II numerous changes, which require that different types and amounts of materials be stored, have taken place in U.S. defense preparedness assumptions. According to our previous report, ^{1/} many deficiencies exist in the quality, forms, types, and amounts of materials stored in the stockpile, and stockpile goals established in 1976 will take 15 to 20 years to attain because of administrative restrictions and management practices.

Stockpiling these materials is important because the United States must import over half its raw material needs, while the Soviet Union is nearly self sufficient. Also, some of these materials are imported from sources that may not be available in an emergency. For instance, South Africa is the largest supplier of chromium, an essential material used to produce high performance aircraft engines and weapon systems.

Although industrial preparedness is vitally dependent on the availability of certain raw materials, concerns exist regarding a number of materials issues. Some concerns include:

- What is being planned to expedite the achievement of stockpile goals?
- Is attention being directed to ensure that materials are stockpiled in the forms most readily usable by industry?
- Are storage sites for these materials still in optimal locations to user industries?
- Are Government programs for the development of domestic resources and/or research for acceptable substitutes being emphasized?
- What austerity measures will be required of the civilian sector of the economy regarding the lack of these materials?

Energy sources

Energy sources available in mobilization must be adequate to meet the manufacturing needs of the defense industry and the mobility requirements of the Nation and the Armed Forces. However, the oil embargo of 1973 demonstrated that the United States was significantly dependent on foreign oil imports as a major source of energy. The implication that this dependence has on the overall ability of the United States to mobilize, including

^{1/}"The Strategic and Critical Materials Stockpile Will Be Deficient for Many Years" (EMD-78-82, July 27, 1978).

the industrial base, has prompted the Congress to establish the Strategic Petroleum Reserve. However, this reserve has not yet been filled, and many questions exist regarding the ability of U.S. domestic oil reserves to meet mobilization needs. 1/

Since the oil embargo, various steps have been taken to reduce U.S. dependence on foreign oil, encourage domestic exploration, and develop alternative energy technologies. Although the real potential for future energy independence may lie in the development of alternative energy technology, the program today is fraught with controversy.

For instance, despite the fact that nuclear reactors have been supplying electrical power for several years, the accident at the Three Mile Island reactor has created great disagreement over whether nuclear energy holds the most promise for the future. Questions also exist about the issues of nuclear waste disposal and the potential proliferation of nuclear capability as more nations acquire this technology.

Although other energy sources are being explored, such as solar energy and laser fusion reactors, their contributions will not be realized for many years. Should a national emergency arise in the meantime:

- What plans exist to assure that adequate energy resources are available to industry during mobilization?
- What alternative energy sources are available to meet industry's needs?
- Is coal an acceptable substitute?
- Can key defense industries quickly convert to alternative energy sources, such as coal?

Transportation

Adequate transportation resources must exist before mobilization begins because of its simultaneous and immediate importance to the mobilized economy as a whole, as well as the industrial base. Transportation resources must be sufficient to move raw materials and component parts through the intermediate stages of manufacture, as well as finished products to points of embarkation. Strong competition for these resources may also arise from the need to move men and materiel to the theater of battle. Recent mobilization simulations (Nifty Nugget and Rex '78'), conducted by both the defense community and civil government agencies, indicated

1/"Actions Needed To Improve the Viability of the Strategic and Critical Materials Stockpile" (C-EMD-81-1, 11/24/80, SECRET).

that the adequacy of some available transportation systems could be a significant problem in a national emergency.

The railroads would be an important mode of transportation to industry during mobilization because of their unique capability to transport massive quantities of raw materials and heavy military equipment, such as tanks, over great distances, with relative speed and efficiency. However, it was noted during the Nifty Nugget exercise that the simulated passage of men and materiel was delayed significantly because the decrepit state of repair for some rail lines limited train speeds to 20 miles per hour.

Government regulations

There is growing concern that Government regulations are a handicap to the Nation's industrial base. For example, a December 31, 1980, report of the Defense Industrial Base Panel of the House Committee on Armed Services stated:

"The defense contractor is bound by procurement regulations and practices which determine both profit rates and contract financing terms. In addition, in the last decade, government regulations in other areas have increased dramatically. The recent requirements of safety, environmental, health, energy, equal employment, and other regulations have diverted large amounts of business capital from investment in new equipment and facilities."

On November 13, 1980, the Commander of the Air Force Systems Command testified before the Defense Industrial Base Panel that the scarcity of minerals, instability of sources, and lack of processing and fabrication capacity in industry have affected the prices of defense equipment and the leadtimes required to produce such equipment. He said that:

"The list of federal restrictions on mineral exploration is extensive. They include land management and land use restrictions such as the Clean Air Act, Federal Water Pollution Control Act, Wilderness Act, Federal Land Policy and Management Act, and the Surface Mining Control and Reclamation Act.

"Currently, there are 80 different laws administered by 20 different federal agencies which directly or indirectly affect the domestic nonfuel minerals industry. The complex regulatory processes, the Government demand for data, and the environmental safety and health requirements often prevent companies from starting new operations or expanding existing capacity."

He said that forging capacity is a good example of capacity problems in industry. He also said that there are only three remaining U.S. suppliers of large forgings, the kind needed for

aircraft landing gear and components, and that this situation is partly due to hundreds of foundries closing in the mid-1970s as a result of Occupational Safety and Health Administration and Environmental Protection Agency rules. Shortages in available peacetime forging/casting capacity have required substantial Government investment in facilities for the production of M-60 tank turrets.

Recently, U.S. Steel announced its intention to close one of its marginally profitable plants, rather than incur the expense required to comply with the Clean Air Act regulations. Regarding Government regulations and mobilization requirements:

- To what degree has industry's ability to meet mobilization needs been affected by Government regulations intended to achieve social and ecological objectives?
- What trade-offs are made or should be made between mobilization concerns for industrial preparedness and achievement of other objectives?
- To what degree have these regulations caused the defense industry to increase dependence on foreign sources of supply?
- How will defense needs for items formerly supplied by affected industries be met in mobilization?
- Is it advisable to allocate significant portions of limited budgets to meet social and ecological objectives, in attempting to meet mobilization requirements through Government investment in industrial facilities?

Skilled personnel

Industry is finding it difficult to meet its peacetime needs for skilled personnel in several of the key industrial trades. For example, technicians, toolmakers, and machinists are in short supply. As a result, there is competition among industries for these people.

The Defense Science Board said that over the next 5 years the United States will be short 250,000 machinists. The Defense Science Board added that it found no effective Government training programs to alleviate the shortage.

In recent congressional testimony, the Commander, Air Force Systems Command, cited technically skilled labor shortages as a major contribution to defense industrial base problems. He also said that the severity of this problem will increase because the United States will lose ground in certain critical skills through 1990.

Mobilization would increase the demand for skilled personnel. However, personnel would need to complete long periods of training and apprenticeship before acquiring the necessary skills.

It may be possible to offset some of industry's needs through greater use of computer assisted manufacturing and numerically controlled equipment. This new technology is characterized by higher production rates and the need for fewer highly skilled equipment operators. In relation to these concerns:

- What programs exist to diffuse new and more productive manufacturing technologies and equipment within U.S. industry?
- Are training programs ongoing or planned to meet the need for skilled personnel?
- Do plans exist to offset the increased demand for skilled personnel that mobilization can be expected to create?
- Do plans exist to allocate skilled personnel between military and industrial needs in mobilization?

WHERE WE STAND TODAY

Limited peacetime defense budgets and DOD guidance have required the services to allocate funds first to enhancing the operational capabilities of existing active forces and second to meeting mobilization needs. Accordingly, low priority and minimal funds have been allocated to industrial preparedness planning; the argument being that unless initial combat capability is first assured it does not make sense to emphasize a program that cannot make a significant contribution until the latter stages of a war. This point of view was voiced by the Chief of Naval Material in recent testimony before the Industrial Preparedness Panel of the House Committee on Armed Services:

"The Navy is reluctant to back budget issues proposing additional funds and the associated people for planning when, the current consolidated guidance delineates a short, come-as-you-are, no warning time war. Under such guidance, long term IPP [industrial preparedness planning] has been lower priority than filling immediate shortfalls."

No alternative program exists to bridge the gap between what the initial combat capability will be and what the war materiel needs will be should U.S. involvement become prolonged.

No "D to P" Day planning

Before July 1976, the services used the "D to P" concept to plan their wartime stockage requirements. Under this concept, the services were to stock enough items to support combat

consumption from D-Day 1/ to P-Day. 2/ The amount of items stocked depended on how long industry needed to mobilize and supply them.

However, in July 1976, the "D to P" concept was superseded with the current "D + 6" mobilization guidance. Under this guidance, the services are to stock enough items to meet the first 6 months of combat consumption and the industrial base is assumed to be able to take over supply at that time. Also, if industry can respond before the sixth month, then reserve item requirements are to be reduced accordingly. However, if industry cannot respond by the sixth month, industrial preparedness actions necessary to make such a response possible are to be identified for funding. Also, on the basis of economic trade-offs and other alternatives, these actions may be proposed to reduce producers' response times below the 6-month period, if possible.

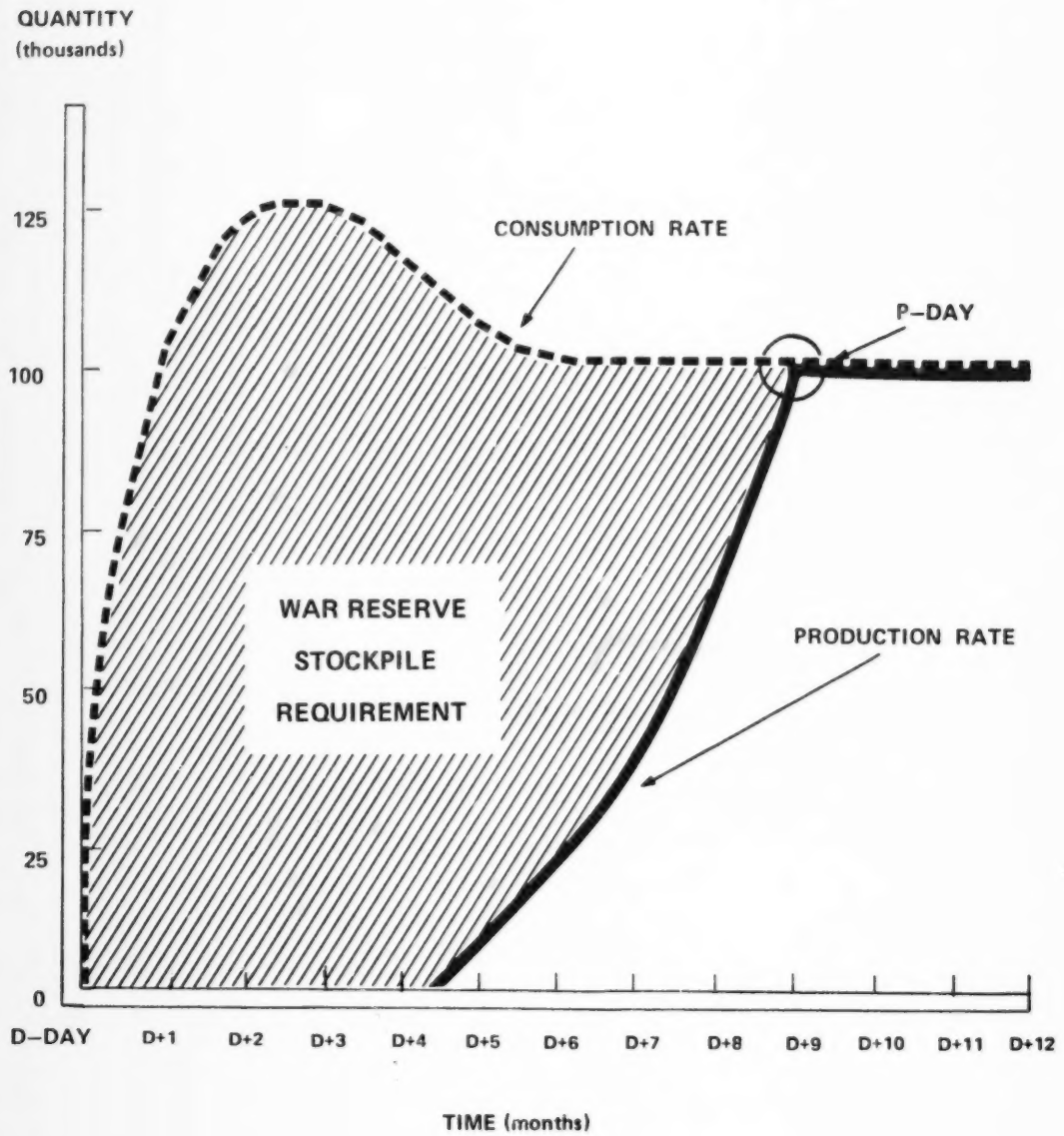
As mentioned above, the current emphasis on initial combat capability has resulted in the abandonment of "D to P" planning. The Commanding General, U.S. Army Materiel Development and Readiness Command, testified before the House Committee on Armed Services on November 14, 1980, that " * * * the continued lack of adequate resources for IPP [industrial preparedness planning] and the increasing emphasis on the 'Short War' scenario spelled the demise of 'D to P.'"

The illustration on the following page shows the "D to P" interface between war reserve stocks and industrial production capability and the importance of "D to P" planning to the continuity of war materiel support.

1/D-Day is the day on which military operations commence.

2/P-Day is the point in time when the rate of production for an item would equal combat consumption.

"D TO P" CONCEPT FOR A TYPICAL AMMUNITION ITEM



Adverse budgetary forces and program guidance

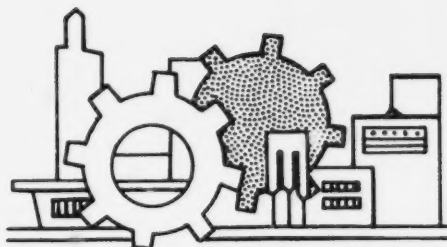
Current guidance emphasizing initial combat capability favors the buying of "one more item" rather than subsidizing actions that would improve the responsiveness of the industrial base. In addition, current budgetary constraints and procurement regulations favor competitive contract awards based on least cost rather than negotiated contracts based on mobilization considerations.

The driving force of budgetary constraints can be shown clearly in guidance regarding investment for the modernization and expansion of the industrial base for ammunition. Guidance for the fiscal year 1970 through 1973 program allowed investment to support total mobilization requirements. However, guidance for subsequent years directed that expenditures for expansion of the base for new items would have priority. From that point on, modernization efforts diminished and resources were allocated to expand the base for improved conventional munitions or to field new items. Sizing 1/ of the base for new items was also restricted. Guidance contained in the Program Objectives Memorandum for fiscal years 1978 to 1982 allowed sizing of the base to meet total mobilization requirements. The following years' guidance (1979 to 1983) reduced the allowable size of new facilities to essentially that required to support a 180-day requirement. The following years' guidance (1980 to 1984) further reduced allowable sizing to a 90-day requirement. This was reinterpreted by the Program Decision Memorandum to limit sizing of new facilities in support of new munitions to that which would support production for the Five-Year-Defense-Plan on a multiple shift basis with little or no surge capability. The evolution of this guidance is shown in the graph on the following page.

1/Determining what the capacity of facilities should be.

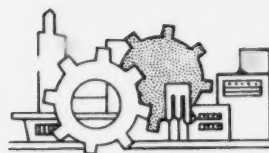
**EVOLUTION OF AMMUNITION PRODUCTION BASE
SIZING CRITERIA FOR NEW FACILITIES FOR
NEW MUNITIONS**

**Program Objectives
Memorandum covering
fiscal years
1978-82**



Facilities sized to support total mobilization

**Program Objectives
Memorandum covering
fiscal years
1979-83**



Allowable sizing reduced to
equivalent of 180-day authorized
acquisition objective

**Program Objectives
Memorandum covering
fiscal years
1980-84**



Further reduction to 90-day
authorized acquisition objective
(plus NATO)

**Program
Decision
Memorandum
covering fiscal years
1980-84**



Further reduction
of facility sizing
to that supporting
the Five-Year Defense
Plan buy

Although this guidance is designed for cost efficient sizing of production facilities to meet peacetime procurements, the ability of these facilities to meet the increased needs of emergency and mobilization situations may be impaired.

What are the consequences?

Although defense officials recognize the importance of planning and funding corrective actions identified to ensure a responsive industrial base for mobilization, current program guidance and budgetary constraints dictate that emphasis be placed on other programs that contribute more to initial combat capability. Personnel and funds are first allocated to these programs, and according to defense officials, there is simply not enough to go around.

Inherent risks are involved in trading off mobilization considerations in favor of initial combat capability. Failure to plan adequately with industry may assure that the United States can only fight a short war. Should combat consumption be greater than expected or should the war become prolonged, an unresponsive industrial base might limit U.S. defense options to capitulation or the use of nuclear weapons. Another risk is that the replenishment of war reserve materiel and efforts to reconstitute U.S. Forces and the economy, once hostilities cease, could be impaired.

CHAPTER 3

DOD'S INDUSTRIAL PREPAREDNESS

PLANNING PROGRAM IS IN DISARRAY

The DOD Industrial Preparedness Planning Program is to ensure that the defense industrial base (commercial and Government-owned facilities and equipment) can mobilize quickly and produce adequate amounts of selected military items in a national emergency. However, two essential elements of the program--item selection and requirements determination--are done differently by each service and are often not done well. Further, planning information received from industry sources is inadequate.

The program has been ineffective because of the low priority given to it as evidenced by limited funding, few assigned staff, and lack of management attention.

Many of these program deficiencies have been identified in past studies by us, DOD, and others. In the past, DOD has proposed program improvements to the services. However, insufficient funding has hampered the implementation of these actions, and no significant program improvement has resulted to date.

DOD has again proposed a number of program changes to the services which it believes will improve industrial preparedness planning.

TODAY'S PLANNING PROGRAM

The industrial preparedness planning process has not changed for many years. It is based on the voluntary, unfunded participation of defense contractors.

Two major elements in this process are the selection of key defense items and the requirements determination. DOD furnishes the information on the DD-1519 (DOD Industrial Mobilization Production Planning Program) planning form to defense contractors who, in turn, report their capabilities to DOD to meet the mobilization production requirements for the items noted. On the basis of the relative strengths and weaknesses pointed out by this data, investment decisions can be made regarding the need to:

- Fund corrective actions to improve the contractors' production capacity.
- Seek additional commercial production sources.
- Modernize or expand DOD-owned production facilities and equipment.

--Reduce war reserve materiel acquisitions because of production base capabilities, etc.

Many shortcomings have been pointed out in this process. Program initiatives proposed by DOD during our last review, including paying contractors for planning, were not implemented or have had only limited application due to low program priority and funds. Consequently, many past criticisms of the program remain valid today.

ITEM SELECTION PROCEDURES

A 1972 DOD instruction provides the general policy and guidance the services are to use to annually select items for industrial preparedness planning. DOD limits service planning to approximately 2,000 items per service, including about 35 major weapon systems each. The instruction further states:

"Industrial preparedness planning will be limited to military end items or components which are essential to operational effectiveness under combat conditions, including training, or to the safety and survival of personnel and meet one or more of the following criteria:

1. Require a long lead time.
2. Require development of, or additional capacity to meet emergency production requirements.
3. Require continuous surveillance to assure preservation or an adequate base to support emergency production requirements.
4. Require critical skills or specialized production equipment."

The instruction also states that the services should not plan for items that are the responsibility of other Government agencies.

We found that the item selection process among the services differed. Some items selected for planning by one Army command did not meet the established criteria, the Navy's five subordinate commands used different item selection methods, and one office excluded consumable items from the planning process. Also, the Air Force stopped selecting spare parts for planning in fiscal year 1979 because the data gathered was not being used and no actions were being taken to correct the deficiencies identified.

Army

Army subordinate commands are to select items for industrial preparedness planning based on an evaluation of items listed in the Army Materiel Plan, 1/ in accordance with Army guidance.

In fiscal year 1980, the Army's five subordinate commands selected 2,364 items for industrial planning. Approximately 74 percent of the items--1,008 ammunition and 736 weapons and fire control items--were selected by the U.S. Army Materiel Readiness Command.

We randomly selected 45 of the 1,008 ammunition items the Armament Command had selected. We found that 7 of the 45 ammunition items, or 15 percent, did not meet the selection criteria because:

- Three developmental items, plus two other items, were actually the management responsibility of other commands.

- One item listed as an ammunition item was not, and it was also identified for planning on the weapons and fire control listing.

- One item had been obsolete for an unknown period of time.

With the possible exception of the last item, these items had been selected for planning each year since at least 1977. Command officials said that these items would be removed from next year's list.

We also randomly selected 20 of the 736 weapons and fire control items the command had selected. We questioned one item because initial operational capability testing had not been completed and operational effectiveness had not been established. An item is not eligible for planning unless it is essential to operational effectiveness under combat conditions. Also, this item was not being managed by the command at the time of our review.

Armament Command officials said individual judgment and the latest item configuration management data are also considered in item selection. They also said that, because of personnel constraints, items were selected primarily from the 1979 listing and not from an evaluation of the Army Materiel Plan.

Navy

Navy instructions provide guidance to subordinate commands regarding item selection for industrial preparedness planning.

1/List of Army-managed items having mobilization significance.

Also, each year the Chief of Naval Operations specifically identifies the aircraft which should be considered for planning.

Our review showed that each of the five subordinate commands interpreted the item selection guidance differently. Further, with regard to one subordinate command reviewed, the item selection process differed between two of its major installations.

For example, the Naval Supply Systems Command instructed the Aviation Supply Office and the Ships Parts Control Center to select items from the Mobilization Deficiency List 1/ based on high dollar value and essentiality. The Ships Parts control Center follows this guidance, but the Aviation Supply Office does not. Aviation Supply Office officials said they had not used the deficiency list for 2 years. They believe that this list is too voluminous, contains extraneous information, and cannot be adequately analyzed in time with available staff. Instead, they select their items from lists of systems to be supplied to aircraft manufacturers as Government-furnished equipment and from lists of reparable parts pertaining to specific aircraft designated for mobilization by the Chief of Naval Operations and the Naval Air System's Command. These reparable parts are selected based on high unit price and peacetime demand rates during the preceding planning period.

Aviation Supply Office planners have excluded consumable items from the planning process, even though they constitute about 80 percent of all line items the office manages. According to Navy officials, Aviation Supply Office planners decided to exclude these items from planning because

- the items did not normally meet industrial preparedness planning selection criteria, and
- resources/staffing were limited and were used to review higher cost reparable items.

Although we empathize with the need to apply limited program resources and staffing to those items most important to mobilization, we do not believe that relevant information was used in arriving at the exclusion decision.

Aviation Supply Office planners said that they believed that consumables did not meet item selection criteria because these items were generally common in nature, were obtainable from numerous sources, and "usually" did not present production problems. However, we found that these judgments were based on peacetime supply/demand experience and not on mobilization needs projections. Peacetime supply/demand relationships could change drastically in

1/List of parts having war reserve stockage deficiencies.

mobilization. Also, high dollar cost alone should not determine whether an item is applicable for mobilization planning.

Another command did not perform the item selection process because of resources and time constraints. Instead, the command copied and resubmitted the previous year's planning list, circumventing the item selection process for fiscal year 1980. Planners at this command did not know what criterion was used to initially select these items or whether they still belonged on the planning list. Also, given the current level of resources for the program, there are no plans to screen the items against DOD or any other item selection criteria.

Air Force

Air Force selection guidance provides that items should be based on

- first, the selected high priority weapon systems to be in the active inventory as of the mobilization day planning date;
- second, the combat essentiality of the items;
- third, the leadtime necessary to obtain the items under current procurement systems; and
- fourth, the dollar amount of the required procurement shortfall.

However, since fiscal year 1979, the Air Force has not selected spare parts for industrial planning because the data gathered was not being used and no actions were taken to correct the deficiencies noted. The Air Force is limiting item selection to aircraft currently in production and associated war consumable items. Updated mobilization production information on spare parts items does not exist.

REQUIREMENTS DETERMINATION

A July 1972 DOD directive states:

"The foundation of the industrial preparedness program is the realistic determination of the total production requirements necessary to support the approved forces post-M-Day." 1/

DOD has assigned the services the responsibility for developing item requirements for industrial planning.

1/"M-Day" means mobilization day.

Although item requirements are to form the basis for planning with industry, the requirements developed by the services are not a sound basis for industrial planning. Some Army requirements are outdated, and others fluctuate widely from year to year. Also, each Navy subordinate command computes requirements differently, frequently without the benefit of essential mobilization information, and Navy planners lack confidence in the accuracy of the requirements.

Army

Each year Army headquarters computes monthly mobilization production requirements for Army-managed items. These requirements form the basis for the subordinate commands' industrial preparedness planning. The requirements represent the quantity of the items that the Army believes must be produced to meet combat consumption beginning with the sixth month of a war.

Inaccuracies and fluctuations have persisted in the item requirements data since 1978. These problems have adversely affected planning efforts with defense contractors. Two examples of requirements fluctuations are shown below:

<u>Item</u>	<u>Monthly mobilization rate</u>		
	<u>FY 1979</u>	<u>FY 1980</u>	<u>FY 1981</u>
Machine gun, 7.62 mm., M60	4,332	3,561	9
Howitzer, self propelled, 8", M110A1	31	97	72

Army officials are attempting to resolve such problems as requirements fluctuations. In the meantime, the Army has authorized its commands to use fiscal year 1977 requirements for ammunition items and fiscal year 1979 requirements in planning weapons and fire control items for fiscal years 1980 and 1981.

Navy

In November 1972 the Secretary of the Navy assigned responsibility for the development of item requirements for industrial preparedness planning to the Chief of Naval Operations. However, despite requests from systems commands, the Chief of Naval Operations has not developed these requirements.

Since item requirements have not been developed, Navy subordinate commands are using various methods to determine item requirements. Commands are developing these requirements without a knowledge of mobilization scenarios, force mix, and other essential information. In some cases, commands are simply estimating the maximum production capability of defense contractors.

For 18 and 26 sample items at the Navy's Aviation Supply Office and the Ships Parts Control Center, respectively, we found that program planners used peacetime demand rates, rather than projected mobilization requirements, to develop requirements.

Other sections within these two organizations had established mobilization requirements for our sample items, but the industrial preparedness planners either did not know that the requirements existed or did not know how to obtain them.

Comparisons made at the Aviation Supply Office between mobilization and industrial preparedness planning requirements for the same items showed that industrial preparedness requirements were substantially higher for the same planning period. For example, industrial preparedness planners established a requirement for 441 damper assemblies for 3 months, while mobilization requirements were only 9 for the same period. In another case, mobilization requirements for a gyroscope totaled 40 units for 3 months, while industrial preparedness requirements totaled 246.

Air Force

On the basis of information provided by Air Force headquarters, the Air Force Logistics Command annually computes and provides the monthly mobilization production requirements for Air Force-managed items, other than aircraft, to its air logistics centers. These requirements are based on projected wartime flying hours, aircraft missions (sorties), materiel expenditures per mission, and peacetime demand rates. According to Air Force officials, peacetime demand rates are used in some item computations because wartime demand data does not exist and models to compute wartime demand rates are still being developed.

All assets projected as available from existing stocks, repairs, and scheduled orders are subtracted from the total monthly production requirements to arrive at the net monthly production requirements supplied to defense contractors for planning purposes. In the case of war consumables, the higher of projected item usage rates for the Pacific or European theater are used as the sustained production requirement after the first 6 months of conflict.

The Air Force computes its industrial preparedness planning requirements for aircraft by using prime contractors' estimates of the maximum post mobilization production rates attainable from existing facilities, rather than mobilization requirement computations. It then adjusts these estimates to reflect production limitations of the producers for major components, such as engines, when they cannot attain the same production rates as the airframe producers. The Air Force asked to deviate from the standard industrial preparedness planning policy in order to simplify planning for aircraft production.

On March 24, 1974, the Acting Deputy Assistant Secretary of Defense granted the services permission to plan for aircraft in this manner. Although this procedure may simplify planning for aircraft production, it may not result in requirements which reflect what the true wartime demand for aircraft production will be.

As mentioned previously, the Air Force discontinued all industrial preparedness planning for spare parts, which comprised the bulk of its program, because the information gathered was not being used. Its current planning program is limited to three aircraft now in production (A-10, F-15, and F-16) and about 130 associated war consumable items, such as munitions, fuel tanks, bomb racks, and pylons.

INDUSTRY PLANNING DATA

In a May 1977 report, ^{1/} we said that DOD's planning with individual contractors was inadequate and was based on unrealistic assumptions. In this review, we found that this situation had not changed. Contractors generally projected their capacity to meet wartime requirements based on inadequate analyses. Prime contractors often obtained no input from key subcontractors and generally assumed the ability to meet increased supply demands.

For example, in 16 of 51 planning documents reviewed at the Navy Aviation Supply Office and the Ships Parts Control Center, the contractors indicated that planning with subcontractors had not been done. The cost and effort required were cited by the contractors as the reasons in seven cases; no explanations were given in the other nine instances.

Contractors also generally assume that essential elements, such as Government-owned production equipment, raw materials, and skilled labor, would be available. However, this is not always a realistic assumption. For instance, almost all planned Army ammunition items are uniformly shown to start mobilization production in the fifth month after mobilization day. However, the 5-month start time depends on the availability of components not currently planned and Government-furnished plant equipment packages, some of which will require transportation, installation, and the removal of heavy preservatives.

Government-furnished plant equipment packages have also been the subject of several past reports which disclosed that these packages were often incomplete and in poor repair and contained obsolete machinery.

Besides the lack of funds to pay contractors for indepth planning, contractors may have been discouraged from conducting detailed analyses because little, if any, action is taken by the services to correct forecasted problems.

^{1/}"Restructuring Needed of Department of Defense Program for Planning with Private Industry for Mobilization Production Requirements" (PSAD-77-108, May 13, 1977).

LOW PROGRAM PRIORITY

DOD's Industrial Preparedness Planning Program has been ineffective because of the low priority it has received. Although defense officials recognize the importance of a responsive industrial base for mobilization, current guidance emphasizes other programs that are thought to contribute more to initial combat capability. The low priority given to the program is evidenced by the program funding, numbers of people, and management attention given to it.

Limited program funds

One of the most visible indicators of program priority is the funds provided. Generally, the services have not received the funds needed to adequately plan for their items and thereby satisfy program objectives. Further, program funding varies significantly among the services.

In fiscal year 1980, the Army budget included about \$19 million for gathering industrial preparedness planning information. Of that total, the Army Armament Materiel Readiness Command asked for \$14.5 million to finance the planning for over 1,700 items. Armament Command items accounted for about 74 percent of the total Army program. However, the command only received \$9 million, less than half of the total Army budget for the industrial preparedness planning function.

Because of its low priority in relation to other Navy programs, the industrial preparedness planning line item in the Navy's budget has been unfunded for several years. Consequently, funds are not earmarked for the implementation of identified production enhancement actions, personnel training, or the planning function itself. Amounts spent on the program represent a percentage of the salaries of full-time or part-time personnel assigned to the program by each headquarters organization and systems command. During fiscal year 1980, the Navy spent about \$400,000 planning for 1,504 items.

The Air Force fiscal year 1980 budget included about \$1.9 million for industrial preparedness planning. However, in April 1979 the Air Force discontinued planning for spares, which formed the majority of its planning program, because the data gathered was not being used and no corrective actions were being taken when deficiencies were identified. Air Force officials believe that the production information gathered cannot be acted on because of the low funding priority for the program. Currently, the Air Force is only planning for aircraft in production and war consumable items, such as munitions, fuel tanks, bomb racks, and pylons.

Over the years, limited funds have adversely affected the planning program. For instance, we were told that personal contacts and visits to contractors have not taken place. However,

the more demonstrable impact results from the inability to fund actions identified to enhance producer responsiveness and/or manufacturing capability, which include filling plant equipment package voids and other equipment shortages. For example, the Army's consolidated Production Base Plan for fiscal year 1980 shows that mobilization rates could not be attained for 52 percent of the 208 end items identified until 17 or more months after mobilization day. Only about 24 percent could achieve mobilization production rates by the sixth month.

Nineteen of 51 planning schedules reviewed at the Navy's Aviation Supply Office and the Navy's Ships Parts Control Center showed that enhancement actions were required to shorten post M-Day production leadtimes, or to increase production/repair capability for planned items. These proposals were not evaluated or reported to higher headquarters. Some Navy planners said contractors were discouraged from identifying enhancement actions because service personnel were not available to verify the need for them and funds were not available to finance them.

There is evidence that this also takes place in the Army program. For instance, in a recent audit of the Armament Command's program, the U.S. Army Audit Agency ^{1/} found that wording had been added to planning documents that was discouraging contractors from identifying measures to improve production.

Lack of staff resources

Service officials generally believe that there are not enough people assigned to the program to adequately screen items and to plan with industry.

Army Armament Materiel Readiness Command officials are concerned that only a small percentage of their items have been adequately considered for mobilization planning because of personnel constraints.

The Navy planning program is mainly a part-time effort that is performed to the extent that higher priority workload allows. As a result, the planning with industry for many items is not done, and the planning that does occur is limited in quality and scope.

The Navy systems command have had to compromise the quality of their planning efforts to work within the minimal staffing allocated to the program. Staffing limitations prevent service personnel from planning all items identified as requiring it. For instance, in fiscal year 1980, two part-time planners, each available 30 percent of the time, screened and selected 326 items from the 286,361 items managed by the Navy's Aviation Supply Office.

^{1/}U.S. Army Audit Agency Report MW 80-203, March 17, 1980.

To do this, we were told, the universe from which items were selected was limited and all consumable items were excluded from consideration.

Inadequate management attention

Other than the general cyclical processing of various planning forms, DOD and service management have not set intermediate goals or milestones for the program. The planning process repeats itself each year without a sense of direction or demonstrable progress toward any well defined goal.

The Army is the only service that has established a centralized reporting system for its planning program that documents the condition of its industrial base for higher headquarters use. Within the other services, information remains mainly fragmented and unused at the lower planning organizations.

Lack of management attention is particularly pronounced in the Navy. Except for general guidance provided in instructions, headquarters personnel have done little to become actively engaged in the planning effort. For instance, Chief of Naval Operations officials have not provided mobilization requirements for the program despite systems commands' requests. Similarly, Chief of Naval Material officials have done little to assist in program formulation or coordination. The Chief of Naval Material function, with respect to industrial preparedness planning, has degenerated into a rote compilation and "rubber stamp" approval process. We were told that a headquarters level review was not made of items annually selected by the systems commands for planning and that Chief of Naval Material officials did not evaluate the various screening and selection criteria employed. As a result, a uniform, credible planning effort does not now exist.

The lack of management emphasis and attention to data provided by contractors could result in lost opportunities for reducing war reserve stockage requirements. For example, our review of 18 items at the Navy's Aviation Supply Office showed that for 7 of the items contractors could make partial delivery from new production during the first month after mobilization began. The full monthly requirement could be satisfied for four of the seven items during this same period. Similar conditions existed among 17 of the 26 items we reviewed at the Navy's Ships Parts Control Center. Portions of this reported production capability overlap with the war reserve stockage requirements established for these items. Since items that can be supplied in time from industry do not have to be prestocked, war reserve stockage requirements for these items could be reduced. However, this information has not been used and, in some cases, materiel is being stockpiled.

Navy officials said that while it is true that some items that meet this criteria are being stockpiled, they are obtained through the recategorization of peacetime assets in long supply to the war reserve program, not through procurement of war reserve stocks. These officials also said that the alternative to this practice would be to dispose of materiel already on hand in favor of much less certain industrial preparedness planning agreements.

We recognize that inaccuracies could exist in the data provided by contractors and that its reliability should be verified prior to use. However, the realistic determination of war reserve stockage levels requires that mobilization production capability be considered. This "D to P" interface is also prescribed in DOD guidance.

Failure to interface production information with the war reserve program can result in the overstatement of war reserve requirements. Whether actual stockage to meet these requirements comes from war reserve procurement or from the recategorization of peacetime long supply assets is irrelevant to this point. However, the potential for unnecessary war reserve procurement would exist.

The Army and the Air Force may also be overstating their war reserve requirements because

- the Army has deemphasized "D to P" planning with the advent of the short war concept; and
- the Air Force no longer plans mobilization production for spare parts, and "D to P" information would therefore not be available on these items.

DEFENSE STUDIES AND INITIATIVES

Since our last review in 1976, DOD has conducted several mobilization studies that have encompassed industrial preparedness issues. Two of these studies, commonly referred to as the "Surge" and "Sustainability" studies, highlighted a number of industrial preparedness planning concerns. These studies are reflected in the planning initiatives DOD is proposing to improve industrial base responsiveness.

Surge capability study

The recently completed Surge study identified planning actions that could be taken to compress and accelerate ongoing peacetime production of military items, should an emergency situation arise. As envisioned by DOD, surge planning actions would be geared toward maximizing the production obtainable from existing plant and equipment and would be limited to a select number of key weapon systems. Most surge actions would require contractual arrangements with the producer and additional expense. Examples of some surge actions would include

- allocating and storing, in advance, material, supplies, and personnel to enable contractors to transition from a single shift to a multiple shift workday;
- acquiring and prepositioning limiting equipment and tooling;
- buying and stockpiling long leadtime items; and
- paying contractors for detailed planning as a contract line item.

Surge capability is designed primarily to enhance industrial responsiveness in a short-intense war and/or to preclude serious depletion of war reserve stocks in a limited emergency. A limited emergency could include active involvement of U.S. Forces, such as in Vietnam, or may only involve providing increased materiel support to allied or friendly nations, such as in the 1973 Arab-Israeli War. Surge capability could also hasten the replacement of war reserve stocks if depletion were required.

Surge actions are designed to increase short-term support. However, as implemented by the services, emphasis is on expediting the completion of items already in process rather than sustaining production. Unless steps are also taken to ensure the continued supply of the raw materials and intermediate component parts necessary to continue production support after a surge, initiation of surge actions could "drain the production line dry."

Sustainability study

The Sustainability study, which was ongoing at the time of our review, is directed toward identifying optimal investment strategies and trade-offs among the industrial base, war reserve stockage, and other defense programs, which will provide the logistic continuity required to support U.S. Forces in a prolonged conventional conflict. This type of planning is geared more toward the type of investment necessary to support total mobilization requirements. Examples of such investment options would include

- constructing additional manufacturing facilities,
- preserving and storing equipment, and
- instituting training programs for critical skills.

DOD initiatives

DOD has recently proposed a number of program changes to the services which it believes will improve industrial preparedness planning. One of the more significant changes involves the integration of planning responsibilities for current systems into the system/project management and procurement functions of the

services. If this change is implemented by the services as envisioned, it will require project managers and procurement officers to consider industrial preparedness during system development and procurement.

DOD has also recognized a need for greater visibility over service branch planning operations. As a result, it intends to require the services to submit production base plans and conduct briefings each year regarding the status of the planned industrial base. These briefings are to include consolidated information from all major commands about proposed measures to enhance the base and their associated costs. As envisioned, DOD will use this information in making budget determinations for the planning program.

Current DOD guidance limits service branch planning to approximately 2,000 items a service, including about 35 weapon systems each. The number of individual items planned is to be reduced in favor of more indepth analyses of fewer, more select items (DOD projects a reduction of 30 to 50 percent). Also, the items are to be selected on a total system/end item basis, rather than on a "piecemeal" basis, as they are now.

Also, indepth planning for critical systems, equipment, and components is to be funded as a separate line item in procurement contracts. This is known as the Data Item Description System clause. Voluntary planning is to be replaced where possible with this system and/or funded sector studies, especially in the secondary item area.

DOD has also required the services to include surge capability in their planning. This requirement was included in the Defense Programming and Planning Guidance and in the Planning and Programming Guidance Memorandum for fiscal year 1982. In addition, DOD is rewriting Directive 4005.1, Instruction 4005.3, and Manual 4005.3-M to include the various program changes. This guidance will recommend various planning methods for different circumstances and will allow the services to select their methods on an item-by-item basis.

DOD has recently emphasized the adoption of surge planning actions in industrial preparedness planning. As stated earlier, these actions characteristically require some increased program cost (see pp. 30 and 31). Similar actions were proposed to the services during our last review. However, low priority, funds, and management attention afforded industrial preparedness planning impaired their implementation.

CONCLUSIONS

The ineffectiveness of DOD's Industrial Preparedness Planning Program can be attributed to the low priority given to it. DOD priorities give the program limited funds, people, and management attention.

Two essential elements of DOD's industrial preparedness program--item selection and requirements determination--are not being performed consistently by the services. Moreover, the information received from industrial sources is inadequate and unreliable because production projections generally are not based on adequate analyses.

Lack of management emphasis and attention to data provided by contractors could possibly lessen opportunities for reducing war reserve stockage requirements.

DOD has proposed a number of surge planning initiatives to the services. However, unless steps are also taken to ensure the continued supply of raw materials and intermediate component parts necessary for continued production after "surge" is initiated, production lines could be "drained dry."

DOD's Industrial Preparedness Planning Program has been studied repeatedly over the past several years. Although many recommendations have been made to correct the deficiencies identified, little action has resulted. The program initiatives currently being proposed are similar to those proposed during our last review 4 years ago. However, the implementation of these proposals at that time was impaired by the low priority, funds, and management attention given the program. The successful implementation of many of these initiatives depends on increased priority, funds, and management commitment.

CHAPTER 4

INDUSTRIAL PREPAREDNESS PLANNING--

WHAT IS NEEDED?

DOD's Industrial Preparedness Planning Program was implemented to ensure that key defense industries remain capable of quickly responding to potential wartime needs for military items. However, many studies have shown that the present program has not been able to ensure a responsive industrial base.

DOD has continually given the program a low priority and has provided limited funds. In view of the current threat, limited options, and risks associated with an unresponsive base, a national policy is needed to clearly define industrial base expectations.

WHAT DOES THE UNITED STATES EXPECT FROM THE INDUSTRIAL BASE?

In the fiscal year 1981 Military Posture Statement, the Joint Chiefs of Staff state:

"Planning for US conventional forces must consider the likelihood that hostilities may begin unexpectedly and last for an extended period of time. Forces must be well equipped for the duration of combat operations. Initial combat readiness is impaired by some materiel shortfalls, but from a logistics standpoint, sustainability for extended combat is an equally pressing concern, since success in a long war is dependent upon timely availability of replacement resources. Logistics sustainability is achieved with sufficient war reserve materiel (WRM), a responsive industrial production base, and an efficient wholesale logistic support system."

If the goal of the United States is to be able to wage a conventional war as long as any potential enemy, as suggested by the Joint Chiefs of Staff, an adequate and responsive industrial base must be assured. Also, whether the conflict is short or long, or whether the base contributes during active combat, the industrial base will still be required to reconstitute U.S. Forces and the economy after the war.

DOD's Industrial Preparedness Planning Program has not ensured that the industrial base will be able to furnish materiel when war reserve stocks are depleted. In fact, huge gaps exist between when some stocks could be exhausted and when production will equal needs. Thus, the sustainability of U.S. Forces is very uncertain.

The fact that the industrial base cannot respond as required has been known for years. However, little corrective action has occurred because DOD has emphasized the operational needs of active forces and initial combat capability.

Operational needs and initial combat capability are important; however, the consequences of not being able to sustain U.S. Forces in conventional combat are severe. Essentially, the United States risks being faced with two options, surrender or escalation to nuclear war. Faced with limited and apparently undesirable options, the United States must decide if it is willing to accept this risk.

We believe that a national policy is needed to clearly define industrial base expectations because of the current threat, limited options, and risks associated with an unresponsive industrial base. If the policy reinforces the goal of a responsive base and being able to sustain conventional war as long as any potential adversary, a companion question that also must be addressed at the same time is, "How much is the United States willing to invest in this sustainability?"

In addressing the sustainability issue, it is imperative that "D to P" planning be an essential component, since one of the major inadequacies of industrial preparedness planning today is that the link between reserve stocks and production response is missing.

The American Defense Preparedness Association voiced its concern over the absence of a national policy statement about the sustainability of U.S. Forces and the responsiveness of the U.S. industrial base. Its recent report stated:

"The recent Congressional authorization for the administration to register young men appears to indicate that a turning point has been reached in the national attitude towards our defense posture. While the American Defense Preparedness Association applauds this manpower initiative, we remain concerned that a companion national policy statement and related actions have not been initiated to improve not only the materiel readiness and sustainability of our Armed Forces but also the readiness of the industrial production base. Until recognition is given to these very important ingredients of our National Security the readiness of our Armed Forces remains in doubt."

Because of concerns regarding the adequacy of the defense industrial base, hearings were recently conducted by the Defense Industrial Base Panel of the House Committee on Armed Services,

96th Congress. Panel Chairman Richard H. Ichord, in his transmittal letter for the December 29, 1980, report, stated:

"The panel finds that there has been a serious decline in the nation's defense industrial capability that places our national security in jeopardy. An alarming erosion of crucial industrial elements, coupled with a mushrooming dependence on foreign sources for critical materials, is endangering our defense posture at its very foundation."

CONCLUSIONS

DOD's Industrial Preparedness Planning Program has not assured its objective of a responsive industrial base. A major reason is that defense guidance emphasizes other programs thought to do more to enhance initial combat capability.

DOD has continually given the program a low priority and has provided limited funds. However, in view of the current threat, limited options, and risks associated with an unresponsive base, a national policy is needed to define industrial base expectations.

If this policy reinforces the goal of a responsive industrial base to sustain U.S. Forces throughout the spectrum of conventional conflict, a decision of how much the United States is willing to invest to assure sustainability must also be made. This information would assist DOD in restructuring and focusing its planning efforts, considering the role identified for the defense industrial base and the resources available to accomplish this role.

RECOMMENDATIONS

We recommend that the Congress, in coordination with the executive branch, establish a clearly defined and comprehensive national policy regarding industrial preparedness. Hearings should be held to develop this policy. This policy should encompass both the preparedness expectations for the industrial base, as well as what the United States is willing to invest to achieve it. Once this national policy is established, the Secretary of Defense should develop a program to complement it.

To increase the effectiveness of planning efforts in the interim, we recommend that the Secretary of Defense:

- Clearly define the circumstances that the industrial base is expected to be responsive to and the role it will play in each.
- Clearly define the priority and funding availability industrial preparedness planning will have in relation to other DOD and service programs.

- Assure that service industrial preparedness planning efforts are interfaced with other related defense programs to assure continuity of support over the planned period.
- Assure that service planning efforts are scaled to what can realistically be accomplished within assigned priority and available funds considering either
 - substantially limiting the number of individual items planned or
 - limiting indepth planning to a few vital items while using studies of key industrial sectors to identify potential mobilization problems.

AGENCY COMMENTS

On February 24, 1981, DOD provided oral comments on this report. DOD generally agreed with our findings, conclusions, and recommendations.

DOD agreed that the Industrial Preparedness Planning Program has received a low priority and, as a result, is ineffective. DOD also said that it is working to improve the program and related resource allocations and that recently

- the program had been included in the Defense System Acquisition Review Council process and
- systems, equipment, and item program managers had been given responsibility for carrying out the program.

We did not verify the extent to which the services had implemented these recent changes or evaluate the potential effect of these changes on the program.

DOD agreed that a national policy about industrial preparedness is needed and said that the lack of a national policy must be addressed by the Congress and the National Security Council. DOD also said that the program requires support at high levels within DOD if it is to become a fully supportable and viable program.

DOD said that maintaining the capacity of the industrial base to respond to military contingencies is a major element of U.S. strength and deterrence.

On April 3, 1981, DOD provided written comments which generally confirm the earlier oral positions. These written comments are included as appendix I.



RESEARCH AND
ENGINEERING

THE UNDER SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

3 APR 1981

Mr. Donald J. Horan
Director, Procurement, Logistics
and Readiness Division
General Accounting Office
Washington, D.C. 20548

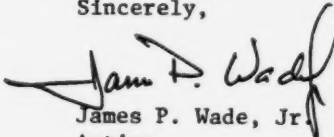
Dear Mr. Horan:

This is in reply to your letter dated February 9 to the Secretary of Defense regarding your draft report, "Defense Industrial Preparedness Planning Program is Ineffective and in Need of Direction and Focus" (GAO Code 947408) (OSD Case #5633).

Enclosed are the Department of Defense comments on the report.

We appreciate the opportunity to comment on this report and wish to assure you that we are working to improve the Industrial Preparedness Program and related resource allocations.

Sincerely,


James P. Wade, Jr.
Acting

Enclosure
As stated

GAO note: Page numbers in this appendix refer to draft report.

DEPARTMENT OF DEFENSE

Comments to GAO Draft Report
Defense's Industrial Preparedness Planning
Program is Ineffective and in Need of Direction and Focus
GAO Code 947408

1. General comments agreed upon by all DoD activities.

a. The Industrial Preparedness Planning (IPP) Program has been given a low priority and as a result is ineffective.

b. Lack of a national policy regarding industrial readiness must be addressed by the Congress and the National Security Council. Also, the IPP Program needs to be supported at high levels within DoD if it is to become a fully supportable and viable program.

c. The program has recently been included in the Defense System Acquisition Review Council's (DSARC) process. In addition, the system, equipment and item program managers have been given responsibility for carrying out the IPP program.

d. Maintaining the capacity of the industrial base to respond to military contingencies is a major element of our national strength and deterrence.

2. Specific comments by the Navy.

a. GAO statement on page 28, fifth paragraph, third sentence -- "Aviation Supply Office officials said that they have not received a deficiency listing for 2 years, and even if they had they would not use it." The deficiency listing is one of the outputs of the stratification process, which is run twice a year at ASO, i.e., April and September. The deficiency listing is available to ASO officials and they have been directed to consider deficiency items in IPP.

b. GAO statement on page 29, second line, should be changed from "and from repairable parts listings pertaining to specific aircraft" to read "and from repairable parts listings pertaining to specific aircraft designated by OPNAV/NAVAIR for mobilization."

c. GAO statement on page 29 - "Planners at ASO have excluded consumable items from the planning process even though they constitute about 80 percent of all line items managed by them." It should be noted that ASO planners have excluded consumable items from planning due to: (a) these items do not normally meet the IPP selection criteria and (b) the limited resources/staffing available have been utilized to review higher cost repairable items.

d. GAO statement on page 38, last sentence, third paragraph -- "However, war reserve stockage requirements for these items have not been reduced and in some cases material is being stockpiled." This statement is misleading. While it is true that some items which meet IPP criteria are being stockpiled, the source of this stockpiling is not procurement but rather recategorization of peacetime long supply assets to the war reserve program. The alternative to this practice would be to dispose of the material already on hand in favor of much less certain IPP agreements.

3. Specific comments by the Army.

a. Current emphasis on initial combat capability that has resulted in a low priority for IPP may result in a U.S. capability to fight only a short war.

b. Draft report does not address all current actions and deficiencies which were surfaced during the 1980 JCS mobilization exercise (Proud Spirit 80) and by the December 31, 1980 House Armed Services Committee Report on "The Ailing Defense Industrial Base."

LISTING OF SUBORDINATE COMMANDS AND INSTALLATIONSVISITED OR INCLUDED IN THIS REVIEW

Army Armament Materiel Readiness Command,
Rock Island, Illinois

Army Communications and Electronics
Materiel Readiness Command,
Fort Mammouth, New Jersey

Army Industrial Base Engineering Activity,
Rock Island, Illinois

Naval Air Systems Command,
Washington Navy Yard, Washington, D.C.

Naval Aviation Supply Office,
Philadelphia, Pennsylvania

Naval Civil Engineer Support Office,
Port Hueneme, California

Naval Electronics Systems Command,
Crystal City, Virginia

Naval Facilities Engineering Command,
Crystal City, Virginia

Naval Sea System's Command,
Crystal City, Virginia

Navy Ships Parts Control Center,
Mechanicsburg, Pennsylvania

Naval Supply Systems Command,
Crystal City, Virginia

Air Force Logistics Command,
Wright Patterson Air Force Base,
Dayton, Ohio

Air Force Systems Command,
Andrews Air Force Base,
Camp Springs, Maryland

Air Force Systems Command,
Aeronautical Systems Division,
Wright Patterson Air Force Base,
Dayton, Ohio

LISTING OF SUBORDINATE COMMANDS AND INSTALLATIONSVISITED OR INCLUDED IN THIS REVIEW

Oak City Air Logistics Center,
Tinker Air Force Base,
Oak City, Oklahoma

Ogden Air Logistics Center,
Hill Air Force Base,
Ogden, Utah

Sacramento Air Logistics Center,
McCellan Air Force Base,
Sacramento, California

San Antonio Air Logistics Center,
Kelly Air Force Base,
San Antonio, Texas

Warner Robins Air Logistics Center,
Warner Robins Air Force Base,
Warner Robins, Georgia

LISTING OF SELECTED PAST REPORTS
RELATED TO INDUSTRIAL PREPAREDNESS

<u>Date</u>	<u>Number</u>	<u>Title</u>	<u>Organization</u>
February 24, 1981	EMD-81-49	Status of Strategic Petroleum Reserve Activities-February 1981	General Accounting Office
November 24, 1980	C-EMD-81-1	Actions Needed to Improve the Viability of the Strategic and Critical Materials Stockpile (Secret)	General Accounting Office
August 1980		Defense Readiness - Force Sustainability and Industrial Preparedness "Why We Are Concerned"	American Defense Preparedness Association
March 17, 1980	MW 80-203	Audit of Industrial Preparedness Program, U.S. Army Armament Materiel Readiness Command, Rock Island, Illinois	U.S. Army Audit Agency
November 2, 1979	LCD-80-3	The Navy Does Not Know if It Has Too Much Electronic/Electrical Depot Maintenance Capability, Too Little, or the Right Kind	General Accounting Office
July 1979		Rex 78 Final Critique (Confidential)	General Services Administration, Federal Preparedness Agency
April 25, 1979	DAMO-OD-MOBEX 78	Nifty Nugget/Mobex 78 Analysis Report (Confidential)	Department of the Army

LISTING OF SELECTED PAST REPORTS
RELATED TO INDUSTRIAL PREPAREDNESS

<u>Date</u>	<u>Number</u>	<u>Title</u>	<u>Organization</u>
December 17, 1978	LCD-78-422A	Army's Requirements for War Reserve Materiel Can Be Reduced Without Impairing Combat Effectiveness	General Accounting Office
March 31, 1978	LCD-77-450	Naval Shipyards--Better Definition of Mobilization Requirements and Improved Peacetime Operations Are Needed	General Accounting Office
November 23, 1977	LCD-78-403	Air Force Maintenance Depots--the Need for More Responsiveness To Mobilization As Well As Peacetime Efficiency	General Accounting Office
May 13, 1977	PSAD-77-108	Restructuring Needed of Department Of Defense Program for Planning with Private Industry for Mobilization Production Requirements	General Accounting Office
April 5, 1977	LCD-76-442	Better Management of Spare Equipment Will Improve Maintenance Productivity and Save the Army Millions	General Accounting Office
January 24, 1977	LCD-77-411	Military Clothing and Textiles Required for War Reserves Can Be Reduced	General Accounting Office
November 15, 1976	77-610	Report of the Defense Science Board Task Force on Industrial Preparedness Plans and Programs (SECRET)	Defense Science Board

LISTING OF SELECTED PAST REPORTS
RELATED TO INDUSTRIAL PREPAREDNESS

<u>Date</u>	<u>Number</u>	<u>Title</u>	<u>Organization</u>
October 5, 1976	LCD-76-407	Management of Department of Defense Industrial Plant Equipment Can Be Improved	General Accounting Office
March 5, 1976	LCD-76-405	Defense Supply Agency Could Reduce War Reserve Requirements for Medical Items	General Accounting Office
December 23, 1975	LCD-75-432	Navy Aircraft Overhaul Depots Could Be More Productive	General Accounting Office
August 18, 1975		Review of Army Mobilization Planning, Volume I of III (Summary)	Department of the Army
June 26, 1975	LCD-75-415	Use of Numerically Controlled Equipment Can Increase Productivity in Defense Plants	General Accounting Office
February 12, 1975	PSAD-75-44	Government Support of the Shipbuilding Industrial Base	General Accounting Office
November 6, 1974	ACDA/MEA-246	Industrial Preparedness in An Arms Control Environment; A Study of the Potential Impact of Sharp Increases in Military Procurement, Volume I, Summary Report	U.S. Army Control And Disarmament Agency
July 1972	AD-768108	The Department of Defense Industrial Mobilization Production Planning Program in the United States	U.S. Army Materiel Command Texarkana, Texas

LISTING OF SELECTED PAST REPORTS
RELATED TO INDUSTRIAL PREPAREDNESS

<u>Date</u>	<u>Number</u>	<u>Title</u>	<u>Organization</u>
July 1972	AD-775071	Trading Off Air Munition Stock-piles and Industrial Mobilization Production Capability: Discussion, Conclusions, and Computer Program Instructions	Rand Corporation
December 19, 1970	AD-877970	Logistic Support in the Vietnam Era	Joint Logistics Review Board
April 7, 1970	B-140389	Management of Government Industrial Plan Equipment Kept for Possible Future Use Should Be Improved	General Accounting Office

LISTING OF SELECTED RECENT TESTIMONY REGARDING
INDUSTRIAL PREPAREDNESS GIVEN BEFORE THE
DEFENSE INDUSTRIAL BASE PANEL OF THE HOUSE
COMMITTEE ON ARMED SERVICES,
96th CONGRESS, SECOND SESSION

<u>Date</u>	<u>Witness</u>
Nov. 12, 1980	Statement of General Henry A. Miley, Jr., retired, President of the American Defense Preparedness Association.
Nov. 13, 1980	Statement of General Alton D. Slay, Commander, Air Force Systems Command.
Nov. 13, 1980	Statement of Admiral A. J. Whittle, Jr., U.S. Navy Chief of Naval Material.
Nov. 14, 1980	Statement of General R. Guthrie, Commanding General, U.S. Army Materiel Development And Readiness Command.
Nov. 17, 1980	Statement of Walton H. Sheley, Jr., Acting Director, Procurement And Systems Acquisition Division, General Accounting Office.
Nov. 18, 1980	Statement of Dr. Jacques S. Gansler, Vice President, Analytic Sciences Corporation.
Dec. 3, 1980	Statement of the Honorable William J. Perry, Under Secretary of Defense For Research and Engineering.

(947408)